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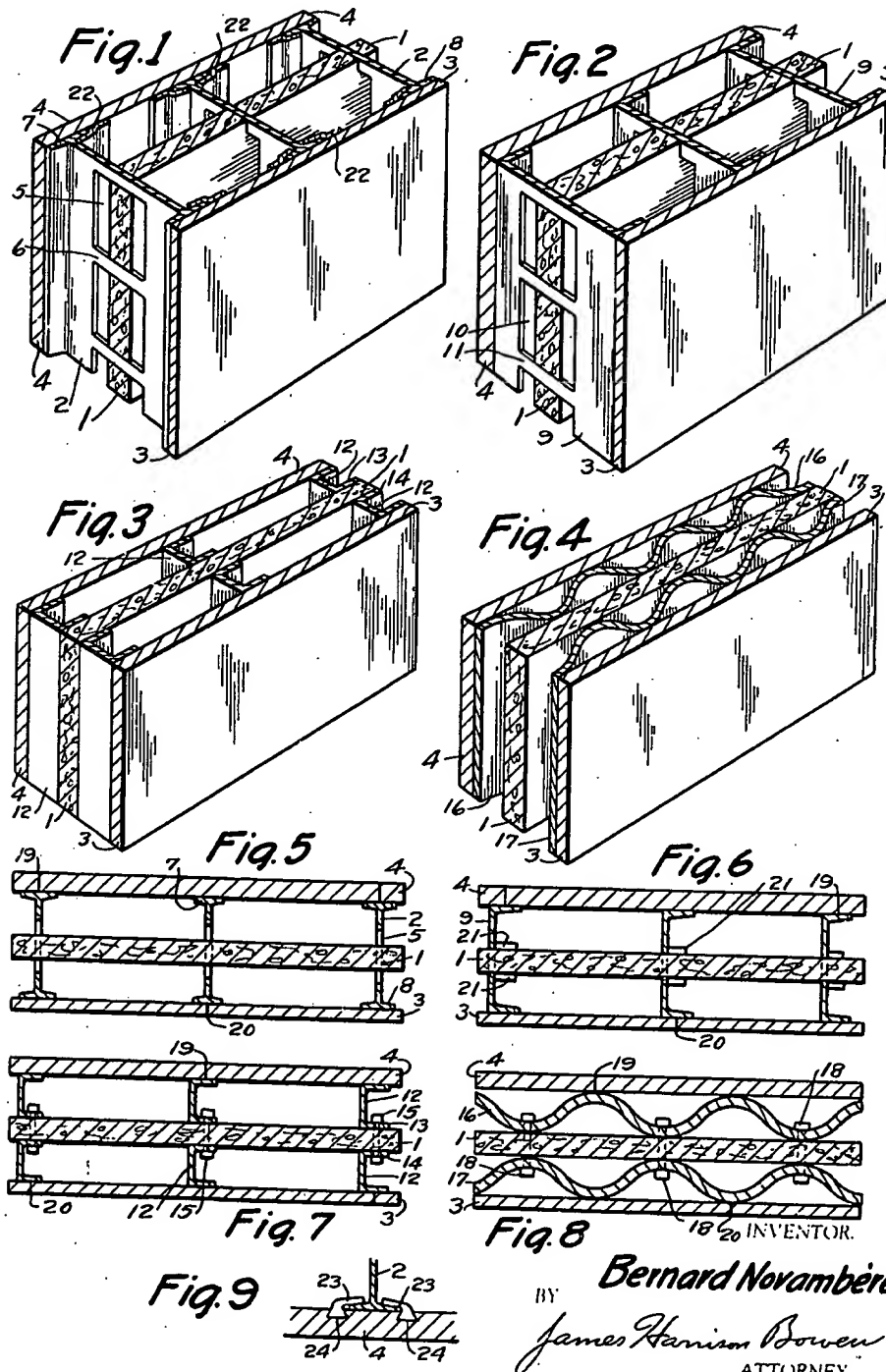
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B. NOVAMBÈRE

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STRUCTURAL SECTION

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Bernard Novambère

BY
James Harrison Bowen
ATTORNEY.

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STRUCTURAL SECTION

Bernard Novambère, New York, N. Y.

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The purpose of this invention is to provide an improved structural section for building walls of the type having surfacing material at both sides, a substantially continuous insulating slab, and supporting members between the slab and surfacing materials, by providing ties between the supporting members through the insulating slab.

The invention is an improvement over the section shown in my former Patent No. 1,978,473 in that connections are made through the insulating slab connecting the supporting elements and thereby increasing the strength of the section. Other improvements are in the use of supporting members of a type adapted to withstand greater bearing loads, and which also simplify and facilitate construction.

In my former patent I used a continuous insulating slab with load supporting members on each side thereof and continuous surfacing slabs on the outside of the load supporting members; however it has been found advisable to provide connections between the load supporting members through the insulating slab and therefore instead of using channel shaped members between the central insulating member and the surfacing members, I now prefer to use continuous members such as I beams or channels in which portions of the web are removed so that the insulating slab may pass therethrough and still leave ties between the sections of the supporting members, or load supporting members as in my prior patent connected through the insulating slab.

With these ends in view the invention embodies a structural section having a substantially continuous insulating slab extending therethrough, with load supporting members having parts thereof extending through said insulating slab or connected through said insulating slab and surfacing slabs on the outside of said load supporting members.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein: Figure 1 is a view showing the section in the preferred design.

Figure 2 is a similar view showing an alternate arrangement in which the I beams are replaced by channels.

Figure 3 is a similar view showing another alternate arrangement in which separate channels are used as the load supporting members on each side of the insulating slab and these are tied together through the slab.

Figure 4 is a view similar to that shown in Figure 3 with the channels replaced by corrugated

members and these are also tied together through the insulating member.

Figure 5 is a sectional plan showing the design shown in Figure 1.

Figure 6 is a similar section showing the channels shown in Figure 2 and also another alternate design in which the material from the openings in the load supporting members is bent outward, forming supporting flanges for the insulating slab.

Figure 7 is a similar section showing the design shown in Figure 3.

Figure 8 is also a similar section showing the design shown in Figure 4.

Figure 9 is a detail showing an alternate method of installing the surfacing slabs.

In the drawing the section is shown as it may be made wherein numeral 1 indicates the central insulating member, numeral 2 the load supporting members and numeral 3 the surfacing material on the inside of the section and numeral 4 the surfacing material on the outside.

In the design shown in Figure 1 the load supporting members are formed of I beams and the webs of the beams are cut out, forming openings 5, with narrow sections 6 between the openings, forming ties connecting the two flanges 7 and 8 of the beams. The openings 5 may be of any length or size and the sections 6 may also be of any thickness and as many connections as may be desired may be used. In the design shown the openings 5 are of a greater width than the thickness of the insulating member 1, thereby providing air space; however it will be understood that these openings may be of the same width as the insulating slab or of any size. For normal use the openings 5 are spaced on 12 inch centers with one inch webs between them; however, it will be understood that these openings may be of any size.

In the design shown in Figure 2 the load supporting members are formed of channels 9 having openings 10 with ties 11 extending through the insulating member 1. These load supporting members may therefore be of any shape or design and may be formed of standard sections or constructed sections as may be desired.

The design shown in Figure 3 is similar to the design shown in my prior patent except that the channels are turned transversely of the wall; however, this is immaterial as obviously these members may be turned in either direction. In this design the channels are indicated by the numeral 12 and their inner flanges 13 and 14 are bolted together through the insulating slab 1 by

bolts 15 as shown in Figure 7. These bolts are preferably spaced on 24" centers vertically of the wall; however, they may be arranged with any distance desired between them and any other means may be used for connecting the channels or structural shapes used for the load supporting members through the insulating slab.

The design shown in Figures 4 and 8 is also similar to one of the designs shown in my prior patent; however the corrugated load supporting members 16 and 17 on each side of the insulating slab are connected by bolts 18 which may also be placed on 24" centers or spaced as desired.

It will also be noted that the surfacing slabs are joined so that the joint is centered on a flange of one of the structural members as shown at the points 19 of the outer slab and 20 of the inner slab. These joints may however be positioned at any point or points.

Figure 5 shows the arrangement shown in Figure 1 with the central insulating member extending continuous through the openings 6 in the members 2. It will be understood that the member 1 will be cut to fit through the sections; however, the parts thereof may be arranged in any manner and cemented together to form a homogeneous section after being installed.

In the design shown in Figure 6 the material from the openings is bent outward forming flanges 21 which bear against the sides of the insulating member 1 to hold the member. This construction may also be used in the design shown in Figures 1 and 5 or any means may be used for holding the central slab.

In the design shown in Figure 1, the flanges of the load supporting members are held to the surfacing slabs by clips 22 which may be secured to the slabs with their inner ends extending over the flanges of the load supporting members. These clips may also be made as shown in Figure 9, in which the ends of the clips, which are indicated by the numeral 23, are held in dovetailed grooves 24 in the inner surfaces of the slabs. These clips may be made of spring material and their outer ends may bear against the flanges of the structural members, or be attached thereto. This construction may be used on both the inner and outer slabs or any means may be used to positively hold the slabs to the structural, or load supporting members, and it will also be understood that these clips may be provided in any design and may be continuous or spaced at intervals as may be desired.

This invention therefore embodies all the features of my former patent, and in addition thereto connects the load supporting members through the insulating slab, increasing the strength thereof, and it will be understood that any means may be used for connecting the load

supporting members on each side of the insulating slabs and load supporting members of any type or design may be used.

Having thus fully described the invention, what I claim as new, and desire to secure by Letters Patent is:

1. A structural section comprising a relatively thick substantially continuous central slab, load supporting members at each side of the slab, means connecting said load supporting members through said slab and surfacing slabs on the outside of said load supporting members, said load supporting members spacing said surfacing slabs from said central slab.

2. A device as described in claim 1, having clips attached to the surfacing slabs and holding said slabs to the load supporting members.

3. A structural section comprising I beams forming studs and having openings through the webs thereof, said I beams positioned transversely of a wall; a relatively thick central insulating slab extending substantially continuously through said wall and fitted around the parts of said I beams; and surfacing slabs abutting the ends of said I beams and spaced apart from said central insulating slab.

4. A structural section comprising vertically positioned structural sections extending transversely across a wall, a relatively thick substantially continuous insulating slab fitted through said structural sections, and surfacing slabs on the outside of said structural sections and held thereto, said surfacing slabs spaced apart from the said insulating slab providing air space therebetween, and held to the structural sections by clips secured thereto.

5. A structural section as may be used in the construction of walls, partitions and the like of buildings comprising a substantially continuous central insulating slab of relative thickness, load supporting members on each side of said slab spaced apart providing relatively large open areas on each side of said slab, means connecting said load supporting members through said slab, and panels of surfacing material on each side of said section positioned against the outer parts of said load supporting members.

6. A wall section as described in claim 5 in which the surfacing panels are secured to the load supporting members.

7. A structural section as described in claim 5 having means connecting the surfacing panels to the load supporting members, said connecting means adapted to transmit part of the load to said panels.

8. A structural section as described in claim 5 having means connecting the surfacing panels to the load supporting members, said panels reinforcing said load supporting members.

BERNARD NOVAMBÉRE.